

Hosts of Insect Eggparasites in Europe, Asia, Africa and Australasia, with a Supplementary American List.

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(Fortsetzung aus Heft 3.)

Hosts and their Parasites in Asia.

Lepidoptera.

<i>hilo infuscatellus</i> . Java	<i>Trichogramma minutum</i> (Riley)	Girault, MS. Notes 1913 (P. van der Goot)
	<i>Trichogramma australicum</i> Girault	
<i>hilo simplex</i> . Japan	<i>Neotrichogramma japonicum</i> (Ashm.)	Girault, 1911 b, p. 41
<i>diatraea striatulis</i> Snellen. Java	<i>Phanurus beneficiens</i> (Zehntner)	Zehntner, 1898, p. 33
	<i>Trichogrammatoidea nana</i> (Zehntner)	id., ib.
	<i>Trichogramma minutum</i> Riley	Girault, 1911 b, p. 19
<i>prionata thrax</i> Linn. Philippines	<i>Ooencyrtus papilionis</i> Ashmead	Crawford, 1911 b, p. 277
<i>astropacha</i> species. Japan	<i>Anastatus gastropachae</i> Ashmead	Ashmead, 1904, p. 154
<i>donestes superanus</i> . Japan	<i>Trichogramma euproctidis</i> Girault	Girault, 1911 d, p. 132
<i>orthetria dispar</i> Linn. Japan	<i>Schedius kurance</i> Howard	Howard, 1910, p. 4
	<i>Tyndarichus navae</i> How.*)	id., ib., p. 7
	<i>Anastatus bifasciatus</i> (Jonsc.)	id., ib., pp. 7—8
	<i>Perissopterus javensis</i> How.	id., ib., pp. 11—12
		See Girault, 1911 a, p. 150
<i>circophaga intacta</i> Snellen. Java	<i>Phanurus beneficiens</i> (Zehntner)	Zehntner, 1898, p. 34
<i>elenocephala cinctipes</i> . Japan	<i>Anagrus</i> ? sp.	Marlatt, 1903, p. 58, pl. I, fig. j.

Hemiptera.

<i>iprorulus bibax</i> . Formosa	<i>Telenomus latisulcus</i> Crawford	Crawford, 1913, p. 244
	<i>Anastatus formosanus</i> Crawford	idem, ib., p. 249
<i>lairgrella gibbosa</i> . India	<i>Hadronotus fulviventris</i> Crawford	Crawford, 1912 a, pp. 2—3
<i>galycorisindicus</i> . India	<i>Telenomus colemani</i> Crawf.	Crawford, 1912 a, p. 2
<i>egonotus serratus</i>	<i>Anastatus colemani</i> Crawf.	id., ib., pp. 6—7
<i>lata affinis</i> (probably). Java	<i>Parachrysocharis javensis</i> Girault	Girault, MS. Notes, 1913 (P. van der Goot)
<i>perkinsiella saccharicida</i> . Java	? <i>Ootetrastichus holochlorus</i> Perkins**)	Perkins, 1912, p. 9

*) Parasitic on the *Schedius*.

**) *Closterocerus javanus* Perkins is probably hyperparasitic upon these four, possibly a primary parasite of the eggs of the same hostes (Perkins, id., p. 16).

<i>Perkinsiella saccharicida</i> Java	? <i>Ootetrastichus pallidipes</i> Perkins	id., ib., p. 13
	? <i>Ootetrastichus metallicus</i> Perkins	id., ib.
<i>Perkinsiella saccharicida</i> . Amboina	? <i>Ootetrastichus tarsalis</i> Perkins	id., ib., p. 10
<i>Perkinsiella vastatrix</i> Breddi. Java	? <i>Ootetrastichus holochlorus</i> Perkins	Perkins, 1912, p. 9
	? <i>Ootetrastichus pallidipes</i> Perkins	id., ib., p. 13
	? <i>Ootetrastichus metallicus</i> Perkins	id., ib., p. 13
<i>Perkinsiella vastatrix</i> Breddi. Amboina	? <i>Ootetrastichus tarsalis</i> Perkins	id., ib., p. 10
	<i>Ootetrastichus homochromus</i> Perkins	Perkins, 1912, p. 12
<i>Perkinsiella vastatrix</i> Breddi. Java	? <i>Eomymar miuri</i> Perkins	id., ib., p. 27
	<i>Paranagrus optabilis</i> Perk.	Girault, MS. notes, 1913 (P. van der Goot)

Orthoptera.

<i>Paratenodera aridifolia</i> . Formosa	<i>Podagrion shirakii</i> Crawford	Crawford, 1913, p. 245
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In Sumatra *Telenomus abnormis* Crawford is parasitic upon the eggs of a notodontid or liparid, *Dissolcus tetartus* Crawford is an egg parasite and *Leurocerus ovivorus* Crawford lives upon the eggs of a butterfly (Crawford, 1911 b, pp. 270, 277); also on the same island *Agiommatius sumatraensis* Crawford is probably parasitic upon noctuid eggs (id., ib., p. 278). In China, *Japania ovi* Girault is parasitic upon leaf-hopper eggs. *Ootetrastichus miuri* Perkins is parasitic upon sugar cane delphacids in China; *O. basilis* on similar host in Java. In Japan, *Telenomus nawae* Ashm. is parasitic upon lepidopterous eggs. In Java, *Gonatocerus bifasciativentris* Girault is parasitic upon leaf-hopper eggs in sugar cane; *Cyrtogaster javensis* Girault is parasitic upon lepidoptera (moth) eggs there, on the leaves of sugar cane; and *Telenomus saccharalis* Dodd upon pentatomid eggs on sugar cane (teste P. van der Goot, in litt.). In Formosa *Pleurotropis fraternus* Motschulsky is reared from the eggs of *Paratenodera aridifolia*.

Orthoptera.

<i>Mantidae</i> . Ceylon	<i>Pachytomoides greeni</i> (Crawford)	Crawford, 1912a, pp. 3—4
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Hosts and their Parasites in Africa.

Diptera.

<i>Tabanus kingi</i> Austen	<i>Telenomus kingi</i> Crawford	Crawford, 1911a, p. 440
<i>Tabanus taeniola</i> Beauvois	<i>Telenomus benefactor</i> Crawford	id., ib., pp. 439—440

Hemiptera.

<i>Cerina butyrospermi</i>	<i>Anastatus vuilleti</i> Crawford	Crawford, 1912 a, pp. 5—6
	<i>Pleurotropis anastati</i> Crawford *)	idem, 1913, pp. 254 bis 255

Lepidoptera.

<i>Anaphe infracta</i>	<i>Telenomus gowdeyi</i> Crawf.	Crawford, 1911 a, p. 441
	<i>Pleurotropis telenomi</i> Crawford *)	id., ib., p. 445
<i>Carpocapsa pomonella</i> Linnaeus	<i>Trichogrammatoidea lutea</i> Girault	Girault, 1911 b, p. 21
<i>Conchyloctenia parum-maculata</i>	<i>Tetrastichus ovicorus</i> Crawford	Crawford, 1911 a, p. 448

Orthoptera.

<i>Cyrtacanthacris septem-fasciata</i> Serville	<i>Scelio howardi</i> Crawford	Crawford, 1910, p. 223
<i>Mantis pustulata</i>	<i>Podagrion fraternum</i> (Westwood)	Dalla Torre, 1898, p. 369
<i>Periplaneta americana</i> Linnaeus	<i>Tetrastichus periplanetae</i> Crawford	Crawford, 1910, p. 223
	<i>Tetrastichus hagenowii</i> Ratzeburg	Crawford, 1910, p. 223

Hosts and their Parasites in Australasia.

Hemiptera.

<i>Liburnia</i> or allies	<i>Anagrus armatus</i> (Ashm.)	Perkins, 1905, p. XXIV
<i>Perkinsiella saccharicida</i>	<i>Paranagrus optabilis</i> Perk.	Perkins, 1905, p. 199
	<i>Ootetrastichus beatus</i> Perk.	Perkins, 1905, p. XXVI
<i>Platybrachys</i> or ally	<i>Fulgoridicida dichroma</i> Perkins	Perkins, 1905, p. 250
	<i>Aphanomerus niger</i> Perkins	id., ib., p. 202
	<i>Ectopiognatha major</i> Perk.	id., ib., p. 255
<i>Reduviolus blackburnii</i>	<i>Polynema reduvioli</i> Perkins	Perkins, 1905, p. 197
<i>Siphanta</i> species (and allied genera)	<i>Aphanomerus pusillus</i> Perk.	Perkins, 1905, p. 203
	<i>Aphanomerus rufescens</i> Perkins	cf. Brues, 1908, p. 156
		Perkins, 1905, ib.
<i>Siphanta</i> species	<i>Ectopiognatha minor</i> Perk.	Perkins, 1905, p. 255
<i>Tartessus syrtidis</i>	<i>Pterygogramma acuminatum</i> Perkins	Perkins, 1905, p. XXVI
<i>Tettigonia albida</i> or <i>parthaon</i>	<i>Ooctonus australiensis</i> Perk.	Perkins, 1905, p. XXIV
<i>Tettigonia albida</i>	<i>Gonatocerus cingulatus</i> Perkins	Perkins, 1905, p. XXIV

*) Probably secondary.

Lepidoptera.

<i>Antheraea janetta</i>	<i>Neotelenomus anthereae</i> Dodd	Girault, MS. notes 1912 (A. P. Dodd)
<i>Antheraea simplex</i>	<i>Pterosemella viridis</i> Girault	Girault, MS. notes 1912
<i>Carpocapsa pomonella</i> Linnaeus. New Zealand; ? Australia	<i>Trichogramma minutum</i> Riley	Froggatt, 1906 a, pp 390—391
<i>Liphyra brassolis</i>	<i>Neotelenomus</i> species	Girault, MS. notes 1913 (A. P. Dodd)
<i>Tara tephrosis</i>	<i>Ooencyrtus metallicus</i> Gir.	Girault, MS. notes 1912

Orthoptera.

<i>Chortoicetes pusilla</i> Walker	<i>Scelio pulchellus</i> Crawford	Girault, 1913 b, p. 8
<i>Chortoicetes terminifera</i> Walker	<i>Scelio fulgidus</i> Crawford	Girault, 1913 b, p. 8
<i>Locusta australis</i> Brunner v. W.	<i>Scelio thortoicetes</i> Froggatt	Girault, 1913 b, p. 8
<i>Locusta danica</i> Linnaeus	<i>Scelio australis</i> Froggatt	Girault, 1913 b, p. 8
	<i>Scelio froggatti</i> Crawford	Girault, 1913 b, p. 8
	<i>Scelio ovi</i> Girault	Girault, 1913 b, p. 8
	<i>Scelio australis</i> Froggatt	Girault, MS. notes, 1913
„Mantis“ species	<i>Mestocharis podagrionidis</i> Girault*)	Girault, MS. notes, 1912
	<i>Podagrion olenus</i> Walker	Cameron, 1911, p. 644
	<i>Podagrion spiloapterion</i> Cameron	Cameron, 1911, p. 645
	<i>Eupelmus antipoda</i> Ashmead	Cameron, 1911, p. 645
	<i>Podagrion koebelei</i> Crawf.	Crawford, 1912 a, pp. 4—5
	<i>Podagrion beneficium</i> Gir.	Girault, MS. notes, 1912
	<i>Rielomorpha mantis</i> Dodd	id., ib.
	<i>Eupelmus grotiusi</i> Girault	id., ib.
<i>Blatta</i> and <i>Periplaneta</i>	<i>Evania princeps</i>	Froggatt, 1906 b, p. 3

Platyptera.

<i>Psocidae</i>	<i>Alaptus immaturus</i> Perkins	Perkins, 1905, p. XXIV
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In Australia, *Telenomus oecleus*, *ophion* and *omphale* of A. P. Dodd are from pentatomid eggs, also *Hadronotoides pentatomus* Dodd; *Neotelenomus ovivorus* Dodd is from lepidopterous eggs. *Aphanomerus bicolor* Perkins is parasitic upon the eggs of eurybrachine fulgorids and *Phanurus hilli* Dodd upon tabanid eggs. An eupelmid is parasitic upon eggs of feral cockroach.

*) With *Podagrion pax* Girault and *Rielomorpha mantis* Dodd upon which it is probably parasitic.

Hosts and their Parasites in the Islands of the Pacific.

Hemiptera.

<i>Perkinsiella saccharicida</i> . Fiji	<i>Paranagrus optabilis</i> Perk.	Perkins, 1905, p. 199
<i>Perkinsiella vitiensis</i> . Fiji	<i>Ootetrastichus beatus</i> Perk.	Perkins, 1905, p. XXVI
	<i>Anagrus armatus</i> (Ashm.)	Miur, 1906, p. 3
	<i>Paranagrus perforator</i> Perkins	Miur, 1906, p. 3
<i>Rhopalus hyalinus</i> . Hawaii	<i>Telenomus rhopali</i> Perkins	Perkins, 1910, p. 618
	<i>Telenomus paractias</i> Perk.	Perkins, 1910, p. 619
<i>Siphanta acuta</i> Walker. Hawaii	<i>Aphanomerus pusillus</i> Perk.	Kotinsky, 1906, pp. 117—118

Lepidoptera.

<i>Omiodes accepta</i> (Butler). Hawaii	<i>Trichogramma minutum</i> Riley	Swezey, 1907, pp. 46—47
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Parasite.

<i>Omiodes blackburnii</i> (Butler). Hawaii	<i>Trichogramma minutum</i> Riley	Swezey, 1907, pp. 46—47
<i>Omiodes meyricki</i> Swezey. Hawaii	<i>Trichogramma minutum</i> Riley	Swezey, 1907, pp. 46—47
<i>Phlegethontius cingulata</i> . Hawaii	<i>Trichogramma semifumatum</i> Perkins	Perkins, 1910, p. 659

Orthoptera.

<i>Xiphidium varipenné</i> Swezey. Hawaii	<i>Paraphelinus xiphidii</i> Perk.	Perkins, 1905, pp. XXVI, 265
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Platyptera.

<i>Psocidae</i> . Hawaii	<i>Alaptus immaturus</i> Perkins	Perkins, 1910, p. 661 (Fortsetzung folgt.)
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Zur Biologie von *Leptinus testaceus* Müll. Phoresie oder Ektoparasitismus? Neue Beobachtungen.

Von F. Rüschkamp S. J. (Feldkirch, Vorarlberg).

Der blinde *Leptinus testaceus* Müll. ist ein kleiner, nur 2,2 mm messender Käfer von blassgelber bis brauner Färbung. Sein äusserst behendes Benehmen¹⁾, sein flachgedrückter, an *Platysyllus castoris* Rits., den „Biberfloh“, und *Euryparasitus terribilis* Mich., einen Maulwurfsgast, erinnernder Körperbau, das Fehlen der Augen und Flügel, das mit der Stirn verwachsene Kopfschild (Clypeus), die parallel nach rückwärts gerichteten dornförmigen Fortsätze des Kinnes kennzeichnen in etwa seine systematische Eigenart. Da er wie andere augenlose Insekten ein unterirdisches Leben führt, klein, rasch und von leicht täuschender, milbenartiger Gestalt²⁾ ist, blieb er lange unentdeckt und bis heute unerforscht. Ausser guten Beschreibungen der Imago³⁾ haben wir noch wenig Sicheres über die *Leptiniden*. Dies gilt auch von *Leptinus testaceus* Müll., der einzigen Art der gleichnamigen Gattung. Ihre Entwicklung und Lebens-

¹⁾ In der Originalbeschreibung von *Leptinus testaceus* Müll. (Germ., Mag. d. Ent. B. 2, IV., 268) bemerkt Müller: „Seine Behendigkeit im Laufen ist aussergewöhnlich, es (das Käferchen) übertrifft darin auch die schnellfüssigsten aller mir bekannten kleinen Käfer.“

²⁾ s. auch Berl. Ent. Z. 1866, 294.

³⁾ Vergl. Ganglb., Käf. v. Mittelm. II., 1899, 261 u. d. dort angegeb. Lit.